Eureka No. 40, Fan House
Berwind-White Coal Mining Company
E of PA 56, N of Little Paint Creek
Scalp Level
Cambria County
Pennsylvania

HAER No. PA-184-A

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PA,
11-SCA,
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
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# HISTORIC AMERICAN ENGINEERING RECORD

## EUREKA NO. 40, FAN HOUSE

HAER No. PA-184-A

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| Location: | East of PA 56, North of Little Paint Creek, Scalp Level, Cambria, Pennsylvania<br><br>USGS Quad: Richland, Pennsylvania (1:24000)<br>UTM: 17 E.683520 N.4457880 |
| Date of Construction: | 1910 |
| Builder: | Berwind-White Coal Mining Company |
| Present Owner: | Berwind Corporation |
| Present Use: | Abandoned |
| Significance: | The Fan House was part of a widely praised mine ventilation system developed by the Berwind-White Company and implemented at Eureka No. 40. |
| Project Information: | In February 1987, the Historic American Engineering Record (HAER) and the Historic American Buildings Survey (HABS) began a multi-year historical and architectural documentation project in southwestern Pennsylvania. Carried out in conjunction with America's Industrial Heritage Project (AIHP), HAER undertook a comprehensive inventory of Blair and Cambria counties as the first step in identifying the region's surviving historic engineering works and industrial resources.<br><br>The results of this project have been published in Blair County and Cambria County, Pennsylvania: An Inventory of Historic Engineering and Industrial Sites (1990), edited by Gray Fitzsimons and produced by HABS/HAER for the National Park Service. |
| Compiler: | Nancy Shedd and Ken Heineman, Historians<br>Gray Fitzsimons and Kenneth Rose, Editors |

History:

Prior to the construction of the extant fan house, Eureka No. 40, when it began operation in 1905, was force-ventilated by a 7' Stine fan driven by compressed air. This was a temporary installation, however, and was replaced the next year by an electrically operated 20' Capell fan. Both of these early fans were probably situated near the drift mouth. The second fan was replaced about 1910 when Berwind-White erected the fan house that still stands on site. This one-story brick building measures 56' x 43' and contains a 16' double inlet Capell fan which was rope driven by a 200 HP, 50 volt DC motor. It force-ventilated the workings of Eureka No. 40 through a 10' x 10' airshaft which reached a depth of 45'.

At most of the mines in the region, the air flow was directed through the headings by airtight doors. This system usually operated poorly because the doors either leaked or were accidentally left open. At the Windber mines, however, the Berwind-White Company employed a recently developed system which dispensed with doors entirely. The air current from the fan circulated through two airways lying on either side of the main heading. Side airways split off at each cross heading and ventilated the rooms where the coal was worked. Once carried passed the working face, the air returned to the drift mouth by following the cross and then the main headings. The main airways were able to bridge each cross heading by means of wooden or brick and concrete overcasts. This system allowed each section of the mine to be vented independently and automatically, and the Berwind-White Company was widely praised for its installation.

Even with this improved system, however, the company faced difficulty ventilating its mines. Most of its workings were in thin coal seams, reducing the height of the airways and requiring more extensive underground works to recover a profitable amount of coal. Air could not circulate efficiently through such long and narrow spaces, and as the headings were driven deeper, the air quality dropped precipitously. In 1909, only four years after Eureka No. 40 had opened, the bituminous coal inspector reported that all of the company's mines were inadequately supplied with fresh air. To correct this condition at Eureka No. 40, the company replaced the 20' Capell fan with the 16' Capell fan. In addition, Berwind-White enlarged the airways and replaced leaking overcasts. These efforts were never fully successful and in 1914 the company began to sink new airshafts at many of its mines. Eureka No. 40 was connected to a new shaft, named the Yoder Shaft, in 1916. Located over three miles from the drift mouth, the Yoder Shaft was fitted with its own fan and served as both an air inlet and exhaust. In addition, it was equipped with an electric substation to boost the power underground and air compressors for pickhammer mining operations. The fan house at Eureka No. 40 was apparently operated in conjunction with the Yoder Shaft until the mine was closed in 1962.